

APPROACH FOR INDICATING THE OCCURRENCE  
OF A MECHANICAL IMPACT ON A MATERIAL, SUCH AS  
A LOW-DUCTILITY COMPOSITE MATERIAL

ABSTRACT OF THE DISCLOSURE

A method of indicating the presence of mechanical impact is used with a low-ductility material, such as a composite material, having a tensile elongation to failure of less than about 2 percent. The method includes preparing an indicator paint having an impact-sensitive component that produces a visible change when subjected to a mechanical impact, applying the indicator paint to the surface of the low-ductility material, placing the low-ductility material having the indicator paint thereon into circumstances where it may be subject to the mechanical impact, and thereafter inspecting the low-ductility material having the indicator paint thereon for the presence of the visible change. The method may be used to establish design criteria for the low-ductility material by establishing an impact-effect threshold value from the step of inspecting, and determining a design limit for the low-ductility material responsive to the impact-effect threshold value. One result of the using the present approach is to reduce the structural weight by reducing the barely visible impact damage design factor.